

WHAT IS CLAIMED IS:

1. A method for call routing, comprising:

receiving a call request at a first call manager from  
a first telephony device coupled to a packet-based network,  
the call request including a telephone number associated  
with a second telephony device;

accessing a route list associated with the telephone  
number to determine a port of a gateway device operable to  
transmit the call request to the second telephony device;  
and

communicating the call request to a second call  
manager controlling the gateway device included in the  
route list.

2. The method of Claim 1, wherein:

the packet-based network comprises an Internet  
Protocol (IP) network;

the first telephony device comprises an IP telephony  
device; and

the second telephony device comprises a non-IP  
telephony device.

3. The method of Claim 1, further comprising:

accessing a registration information table to  
determine a process identification (PID) of a route list  
control process executed by the first call manager and  
associated with the telephone number; and

communicating the call request to the route list  
control process using the PID, the route list control  
process operable to access the route list.

4. The method of Claim 1, wherein accessing a route list associated with the telephone number comprises accessing a route list to obtain the device name and a port number of the gateway device.

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5. The method of Claim 4, wherein:  
the route list comprises one or more route groups, each route group including a list of one or more port numbers of one or more gateway devices; and

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accessing a route list to obtain the device name and a port number of the gateway device comprises accessing the one or more route groups.

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6. The method of Claim 4, further comprising:  
communicating the device name of the gateway device to a device manager executed by the first call manager; and  
accessing a device name mapping table using the device manager to determine a PID of a first device process executed by the second call manager and controlling the gateway device.

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7. The method of Claim 6, wherein communicating the call request to a second call manager controlling the gateway device comprises communicating the call request and the port number to the first device process.

8. The method of Claim 7, further comprising:  
communicating the call request and the port number  
from the first device process to the gateway device;  
receiving a call proceed signal from the gateway  
device indicating acceptance of the call request; and  
communicating the call proceed signal from the second  
call manager to the first call manager.

9. The method of Claim 8, further comprising  
establishing media streaming between the first telephony  
device and the gateway device in response to receiving the  
call proceed signal from the second call manager.

10. The method of Claim 7, further comprising:  
communicating the call request and the port number  
from the first device process to the gateway device;  
receiving a call denial signal from the gateway device  
indicating a denial of the call request; and  
communicating the call denial signal from the second  
call manager to the first call manager.

11. The method of Claim 10, further comprising:  
accessing the route list to obtain the device name and  
a port number of a second gateway device;

communicating the device name of the second gateway  
device to the device manager executed by the first call  
manager;

accessing a device name mapping table using the device  
manager to determine a PID of a second device process  
executed by the second call manager and controlling the  
second gateway device; and

communicating the call request and the port number to  
the second device process.

12. The method of Claim 10, further comprising:

accessing the route list to obtain a second port  
number of the gateway device; and

communicating the call request and the second port  
number to the first device process.

A1 13. A call manager coupled to a packet-based network and operable to control a plurality of telephony devices, comprising:

5 a first device process controlling a first telephony device and operable to receive a call request from the first telephony device, the call request including a telephone number associated with a second telephony device;

a call control module operable to receive the call request from the first device process; and

10 a route list control process associated with the telephone number and operable to:

receive the call request from the call control module;

15 access an associated route list to determine a port of a gateway device operable to transmit the call request to the second telephony device; and

communicate the call request to a second call manager coupled to the packet-based network and controlling the gateway device included in the route list.

20 14. The call manager of Claim 13, wherein:

the packet-based network comprises an Internet Protocol (IP) network;

25 the first telephony device comprises an IP telephony device; and

the second telephony device comprises a non-IP telephony device.

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15. The call manager of Claim 13, further comprising:  
a digit analysis module operable to receive from the  
call control module the telephone number included in the  
call request, the digit analysis module further operable to  
access a registration information table to determine a  
process identification (PID) of the route list control  
process associated with the telephone number and to  
communicate the PID to the call control module; and

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wherein the call control module communicates the call  
request to the route list control process using the PID.

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16. The call manager of Claim 13, wherein the route  
list control process is operable to access the route list  
to obtain a device name and a port number of the gateway  
device.

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17. The call manager of Claim 16, wherein:  
the route list comprises one or more route groups,  
each route group including a list of one or more port  
numbers of one or more gateway devices; and

the route list control process is operable to access  
a route group to obtain the device name and a port number  
of the gateway device.

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18. The call manager of Claim 16, further comprising  
a device manager operable to:

receive the device name of the gateway device from the  
route list control process;

5       access a device name mapping table to determine a PID  
of a second device process executed by the second call  
manager and controlling the gateway device; and

communicate the PID of the second device process to  
the route list control process.

10       19. The call manager of Claim 18, wherein the route  
list control process is operable to communicate the call  
request and the port number to the second device process  
using the PID.

15       20. The call manager of Claim 19, wherein:  
the route list control process is further operable to  
receive a call proceed signal from the second device  
process and to communicate the call proceed signal to the  
call control module; and

20       the call control module is operable to establish media  
streaming between the first telephony device and the  
gateway device in response to receiving the call proceed  
signal.

A1 21. The call manager of Claim 19, wherein the route list control process is operable to:

receive a call denial signal from the second device process;

5 access the route list to obtain the device name and a port number of a second gateway device;

communicate the device name of the second gateway device to the device manager;

10 receive from the device manager a PID of a third device process executed by the second call manager and controlling the second gateway device; and

communicate the call request and the port number to the third device process.

15 22. The method of Claim 19, wherein the route list control process is operable to:

receive a call denial signal from the second device process;

20 access the route list to obtain a second port number of the gateway device; and

communicate the call request and the second port number to the second device process.



23. The call manager of Claim 18, wherein the device manager is further operable to:

receive a signal indicating that a new gateway device has registered with the call manager, the signal including the device name of the gateway device and the PID of the device process controlling the gateway device;

store the device name and associated PID in the device name mapping table; and

communicate the device name and associated PID to the second call manager coupled to the packet-based network.

24. The call manager of Claim 18, wherein the device manager is further operable to:

receive a signal indicating that a gateway device is no longer under the control of the call manager;

delete the device name and associated PID of the gateway device from the device name mapping table; and

communicate a deletion signal to the second call manager coupled to the packet-based network indicating that the device name and associated PID should be deleted from a device name mapping table of the second call manager.

25. The call manager of Claim 18, wherein the device manager is further operable to:

receive a signal indicating that a third call manager has come on-line in the packet-based network; and

communicating the device name and associated PID of each gateway device controlled by the call manager in which device manager is executing to the third call manager.

A1 26. The call manager of Claim 18, wherein the device manager is further operable to:

receive a signal indicating that the second call manager has gone off-line; and

5 deleting the device name and associated PID of the gateway devices controlled by the second call manager.

27. The call manager of Claim 13, further comprising:  
a local route plan database accessible by the route list control process; and

10 a route plan manager operable to download one or more route lists from a global route plan database coupled to the packet-based network and further operable to store the route lists in the local route plan database for access by  
15 the route list control process.

28. The call manager of Claim 27, further comprising a plurality of route list control processes, each route list control process associated with a route list stored in  
20 the local route plan database.

A/ 29. The call manager of Claim 28, wherein the route plan manager is further operable to:

5 receive a route plan change notification indicating a modification of a route list in the global route plan database;

delete the route list from the local route plan database;

download the modified route list from the global route plan database; and

10 store the modified route list in the local route plan database.

30. The call manager of Claim 29, wherein the route plan manager is further operable to instruct the route list control process associated with the modified route plan to unregister with the call control module after the route plan change notification is received and further operable to instruct the route list control process to re-register with the call control module after the modified route list is stored in the local route plan database.

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31. The call manager of Claim 28, wherein the route plan manager is further operable to:

receive a route plan change notification indicating the creation of a new route list in the global route plan database;

download the new route list from the global route plan database;

store the new route list in the local route plan database;

create a route list control process associated with the new route list; and

instruct the route list control process associated with the new route list to register with the call control module.

32. The call manager of Claim 28, wherein the route plan manager is further operable to:

receive a route plan change notification indicating the deletion of a route list in the global route plan database;

delete the route list from the local route plan database; and

instruct the route list control process associated with the deleted route list to unregister with the call control module.

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33. Call manager software embodied in a computer-readable medium and operable to perform the following steps:

5 receive a call request from a first telephony device coupled to a packet-based network, the call request including a telephone number associated with a second telephony device;

10 access a route list associated with the telephone number to determine a port of a gateway device operable to transmit the call request to the second telephony device; and

15 communicate the call request to a second call manager software controlling the gateway device included in the route list.

34. The call manager software of Claim 33, further operable to:

20 access a registration information table to determine a process identification (PID) of a route list control process executed by the first call manager software and associated with the telephone number; and

25 communicate the call request to the route list control process using the PID, the route list control process operable to access the route list.

35. The call manager software of Claim 33, further operable to access a route list to obtain the device name and a port number of the gateway device.

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36. The call manager software of Claim 35, further operable to access a route group included in the route list to obtain the device name and port number of the gateway device.

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37. The call manager software of Claim 35, further operable to:

communicate the device name of the gateway device to a device manager executed by the first call manager software; and

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access a device name mapping table using the device manager to determine a PID of a first device process executed by the second call manager software and controlling the gateway device.

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38. The call manager software of Claim 37, wherein communicating the call request to second call manager software controlling the gateway device comprises communicating the call request and the port number to the first device process.

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39. The call manager software of Claim 38, further operable to receive a call proceed signal from the first device process.

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40. The call manager software of Claim 39, further operable to establish media streaming between the first telephony device and the gateway device in response to receiving the call proceed signal from the first device process.

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41. The call manager software of Claim 38, further operable to receive a call denial signal from the first device process.

5 42. The call manager software of Claim 41, further operable to:

access the route list to obtain the device name and a port number of a second gateway device;

10 communicate the device name of the second gateway device to the device manager executed by the first call manager software;

15 access a device name mapping table using the device manager to determine a PID of a second device process executed by the second call manager software and controlling the second gateway device; and

communicate the call request and the port number to the second device process.

20 43. The call manager software of Claim 41, further operable to:

access the route list to obtain a second port number of the gateway device; and

communicate the call request and the second port number to the first device process.

A1 44. A call manager coupled to a packet-based network and operable to control a plurality of telephony devices, comprising:

5 means for receiving a call request from a first telephony device controlled by the call manager, the call request including a telephone number associated with a second telephony device;

10 means for accessing a route list to determine a port of a gateway device operable to transmit the call request to the second telephony device; and

means for communicating the call request to a second call manager coupled to the packet-based network and controlling the gateway device included in the route list.

15 45. The call manager of Claim 44, further comprising: means for accessing a registration information table to determine a process identification (PID) of the means for accessing the route list; and

20 means for communicating the call request to the means for accessing the route list using the PID.

25 46. The call manager of Claim 44, wherein the means for accessing the route list is operable to obtain a device name and a port number of the gateway device from the route list.



47. The call manager of Claim 46, wherein:

the route list comprises one or more route groups,  
each route group including a list of one or more port  
numbers of one or more gateway devices; and

the means for accessing a route list is operable to  
access a route group to obtain the device name and a port  
number of the gateway device.

48. The call manager of Claim 46, further comprising:

means for receiving the device name of the gateway  
device;

means for accessing a device name mapping table to  
determine a PID of a second device process executed by the  
second call manager and controlling the gateway device; and

means for communicating the call request and the port  
number to the second device process using the PID.

49. The call manager of Claim 48, further comprising:

means for receiving a call proceed signal from the  
second device process; and

means for establishing media streaming between the  
first telephony device and the gateway device in response  
to receiving the call proceed signal.

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50. The call manager of Claim 48, further comprising:  
means for receiving a call denial signal from the  
second device process;

5 means for accessing the route list to obtain the  
device name and a port number of a second gateway device;

means for obtaining a PID of a third device process  
executed by the second call manager and controlling the  
second gateway device; and

10 means for communicating the call request and the port  
number to the third device process.

51. The call manager of Claim 48, further comprising:  
means for receiving a call denial signal from the  
second device process;

15 means for accessing the route list to obtain a second  
port number of the gateway device; and

means for communicating the call request and the  
second port number to the second device process.